

# Community College and Industry Partnerships

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## I. EXECUTIVE SUMMARY

In recent decades, in response to rapid technological change and increasing global competition, business and postsecondary education have been finding common cause in the preparation of the highly skilled workforce necessary to preserve the nation's competitiveness and economic opportunity. The Obama Administration, recognizing this economic imperative, has set aggressive goals for postsecondary attainment in the United States and emphasized the unique role community colleges can play achieving them.

The scale and adaptability of community colleges make them a strong choice as a driver. Among higher education institutions, community colleges stand closest to the crossroads of higher education and the real world, where Americans need to apply a mix of technical knowledge, business acumen and creativity to add value in firms whose imperative is to compete on innovation<sup>i</sup>. This complex talent mix requires knowledge and skills gleaned from both academic education and vocational training.

The only way to develop curriculum and instruction models that deliver this skill set to large numbers of Americans is for business and education leaders to build collaborations that leverage their combined knowledge of labor markets, skills, pedagogy and students. This integration of vocation and employment-oriented goals in academic educational programs has been termed The New Vocationalism movement.<sup>ii</sup> The movement seeks to create a more well-rounded education that satisfies both the demand for skilled employees as well as the need for a knowledgeable and engaged citizenry by integrating the three historic missions of community colleges: university transfer education, vocational

education and, more recently, developmental education.

A central tenet of New Vocationalism is the need for institutional innovations to identify new models of community college education as a way to better prepare individuals for high wage, high skill jobs. Community college-industry partnerships (CCIPs) are one such institutional innovation. The purpose of these partnerships is most often to enhance the community colleges' historic mission of university transfer education with alternate pathways to postsecondary credentials with labor market value for individuals who are not on a traditional college track<sup>iii</sup>. This may include youth and adults with low-literacy, dislocated workers and English as a Second Language learners. Strong Partnerships tend to develop around local and regional economic and workforce development needs and can take many different forms from joint-investment in facilities to industry sector partnerships.<sup>iv</sup>

CCIPs include many promising "good practices" for helping the populations they target obtain a postsecondary credential including: Systemic Institutional Alignment/Improvement; Curriculum and Instructional Transformation; Academic and Social Support; Professional Development and Shared Resources/Sustainability.<sup>v</sup> Yet, there is still research and analysis work needed to establish best practices that can be fully scaled.<sup>vi</sup>

This issue brief provides a broad overview of CCIPs from the viewpoint of their role in changing community college missions and practices. We first situate the CCIP within the New Vocationalism movement and the community colleges' multiple missions. Second, we provide a definition for CCIPs along with key success factors and activities. Third, we provide three case studies that utilize these activities. Fourth, we have a brief discussion of outcomes and finally have some general recommendations and concluding thoughts.

## II. NEW VOCATIONALISM, MULTIPLE MISSIONS AND CCIPs

Community colleges certainly make sense as a driver of postsecondary attainment goals. They serve an estimated 12 million for-credit and non-credit students<sup>vii</sup>, which means they dwarf other postsecondary education providers, including 4-year schools and workforce training programs in terms of access to and cost of their services. Further, the education, work and life challenges of average community college students make them the least likely to complete a postsecondary education. Community college completion rates are low with an average degree completion rate of about 22 percent for full-time students<sup>viii</sup> and 15 percent for part time students.<sup>ix</sup>

The challenge is designing education experiences that make sense given the students' life realities and what they want out of a community college education. Community college students often pursue work and learning simultaneously, and most seek to build skills with labor market value. Many need some remedial education to participate in college-level work.<sup>x</sup>

Current community college instructional models and curricula are not designed to facilitate integrated vocational and academic skill development or support the complex life-work-education balance, but rather to deliver instruction in narrow silos. Community colleges offer academic, occupational and developmental education<sup>xi</sup> programs. Each of these silos supports one of the often cited multiple missions of community colleges: university transfer, vocational and developmental education.

These missions have historically been operated as separate entities within community college governance and business models with separate operations, staff and funding mechanisms. This siloed structure is reinforced by federal and state level funding and regulation that makes innovation across mission difficult.<sup>xii</sup>

New Vocationalism, with its focus on the integrated skills sets and innovative instructional models, provides a framework to address these needs of the community college student by challenging the existing silos of community college instruction. It envisions the possibility of classroom learning with

real world content; values applied and work-based learning experiences; and is focused on generating benefits to students, community colleges and businesses. This is an outward looking focus with an eye toward value creation for the economy and society.

Community colleges have the scale, pedagogical diversity and access to the student body to improve the postsecondary attainment of many Americans, but they must find ways to integrate their three missions to do so. CCIPs, as a new vocationalism innovation, hold forth the promise of leveraging these assets with those of partners to promote institutional innovations that yield better results in terms of relevant knowledge and skills and degree attainment.

## III. CCIP DEFINITION, SUCCESS FACTORS AND KEY ACTIVITIES

Interestingly enough it is difficult to find a definition of what a community college and business partnership is exactly. For the purposes of this brief we have developed a definition from two core bodies of literature. The first body of literature is the emergent literature on Labor Market Responsive Community Colleges.<sup>xiii</sup> The second is the evolving, but established, literature on career pathways as alternatives to traditional postsecondary education.<sup>xiv</sup> Each body of literature is an offshoot of the New Vocationalism movement and as such understands the complexity of the community college education yet seeks to challenge the status quo with institutional innovations. From these two strands of literature we developed the following definition.

*A Community College and Industry Partnership is a collaboration between a community college and an individual business, group of firms, chamber of commerce, industry association or sector partnership with the purpose of using the resources of all partners to create alternative college education programs for non-traditional students (both younger workforce entrants and older ones in need of skills and education upgrades) that are tightly linked to regional economic development and labor force needs.*

*Partners can contribute human resources, finances, facilities and equipment and leadership to accomplishing the partnerships agreed upon goals and outcomes.*

The expectation is that students who complete these programs and obtain postsecondary credentials will have the skills that meet the needs of area business, improve regional/national competitiveness and earn a family-sustaining wage as well as be prepared for further learning. Postsecondary credentials can include occupational licenses, technical certification, associate and bachelor degrees.

### Success Factors

CCIPs that have the potential to truly transform community college missions and instructional practices can run up against the opposition that arises when multiple partners engage in something as complex as postsecondary education. Business partners often do not understand the governing models of community colleges and get frustrated with the slowness of change while community college faculty and administrators can resist change to institutional practice influenced by outside actors. CCIPs must thus lay a solid foundation of mutual understanding. Carrie B. Kisker and Rozanna Carducci enumerate five success factors for partnership success in the UCLA Community College Review. These success factors are:

1. Recognize a local/regional economic development challenge that calls for collaborative attention.
2. Establish a shared mission and goals.
3. Ensure that value is achieved for all partners (including students).
4. Have strong executive leadership from both the college and industry participants
5. Develop a governance and accountability mechanisms<sup>xv</sup>

While these are simple enough, often agreement on these fundamental issues can either make or break a potential partnership. It is also in the discussions that culminate in these success factors that community college and industry leaders come to understand the “what’s in it for me” in partnership implementation. Getting key success factors right is so critical that it has caused the creation of a new organizational type,

the “intermediary” exemplified by the sector partnership noted in the CCIP definition. An intermediary provides a neutral platform from which community college and industry leaders can discuss their mutual interest as well as engage other regional partners with whom they have common cause. These can include: community-based organizations; labor unions and apprenticeship committees; other colleges; workforce development agencies; human service agencies; and economic development agencies.

### Key Activities

While CCIPs are diverse and address concerns unique to different regions with the assets available to different stakeholders, there is an emerging consensus that a set of “good practices: is taking hold in developing alternative education programs for non-traditional students within the community college context. These practices use partnership resources, relationships, and activities to build alternatives to the semester-based, full-time attendance model associated with traditional college students. Developed by the League of Innovation in Community Colleges from field research in CCIPs<sup>xvi</sup>, these key activities include:

*Curriculum and Instructional Transformation* – partnerships cause meaningful changes to traditional curriculum and instructional practices at participating community colleges. New models include: contextualized, modularized and competency based curriculum and accelerated degree completion, workplace-based learning, and learn and earn models. Employers play a key role in curriculum development and credential validation.

*Academic and Social Support* – partnerships create sustained academic and career navigation supports for students. Examples: Form small learning communities; fund a career center that provides financial aid, academic and career advising.

*Professional Development* – partnerships provide resources for community college faculty and staff to develop skills needed to design new curricula, teach integrated developmental, occupational and academic course work and better track student progress and employer needs.

*Shared Resources for Sustainability* – partnerships contribute to sustaining newly developed educational programs over time as well as create a foundation for new partnerships. Examples include: Cultivate board level leadership for partnerships and co-invest in facilities and equipment.

*Systemic Institutional Alignment/Improvement* – partnerships generate institution-wide changes in community college mission, strategic planning and resource allocation. Examples: simplify enrollment for non-traditional students; Integrate funding across missions and use data-driven program accountability and articulation of credit for learning.

#### **IV. CASE STUDIES**

The following narrative case studies highlight active CCIPs that have created alternative education models for non-traditional students and exemplify the key activities above.

##### Metropolitan College: UPS Collaboration

As discussed in this brief, one hallmark of community college-industry partnerships is the recognition of an economic challenge that demands attention. The Metropolitan College program in Louisville, Kentucky is a particularly good example of what can result from an individual employer's need that has broad economic implications.

UPS is the largest employer in the state of Kentucky. As such, the State has an interest in keeping UPS from moving its headquarters out of state. It also has an interest in educating a larger portion of its population. In 1996, UPS identified workforce development needs that gave Kentucky an opportunity to meet both of these interests. UPS was having trouble staffing its part-time Next Day Air night shift, and without a drastic change in its approach to recruitment, the company would have to move its hub from Louisville.

Faced with the prospect of losing UPS to another state, Kentucky stepped in to help craft a plan to alleviate UPS' concerns. The state's innovative solution was to provide educational benefits to workers in the Next Day Air operation. The result of this collaboration is Metropolitan College, a partnership among UPS, Jefferson Community and Technical College (JCTC), and University of

Louisville. UPS provides part-time employment for students in the program; it also pays half the cost of tuition and reimbursement for textbooks. The state and local governments pay the other half of tuition and provide the students with access to JCTC and University of Louisville.

Students who participate in Metropolitan College work part-time on the Next Day Air night shift with full-time benefits while attending college during the day. These student-employees receive deferred tuition for any major, as well as bonuses and reimbursements for textbooks. The students are responsible to pay fees including parking and student activity fees. Students must participate in workforce preparation activities, including financial literacy, career exploration, resume preparation, and a mock interview.

The Metropolitan College Program has been extremely successful. At the start, only eight percent of UPS workers had a postsecondary degree; by the spring of 2009, 2372 Metropolitan College students had earned some kind of postsecondary credential. The retention rate of Metropolitan College participants at Jefferson Community and Technical College was more than 50% in 2007. UPS enjoyed an increase in job retention as the annual turnover rate for new hires went from 100% in 1998 to 20%, and a 600% return on investment in its students. The program serves students from all over Kentucky, and it has helped to support the local labor market. Two additional Kentucky companies have joined the Metropolitan College Program (Humana and Community Alternatives Kentucky), and Chicago adopted its own version of the Metropolitan College model.

##### *Why It Works?*

There are several reasons why the Metropolitan College program has been successful, including the strong, sustained financial commitment from both UPS and from the State of Kentucky. Funding sources include \$2 million from the state government, \$625,000 from the city of Louisville, \$100,000 from Greater Louisville, Inc., and about \$6.5 million from UPS. In 2007-2008, the per-student cost for Metropolitan College was \$2853 from UPS and \$1991 from all other sources. Another key to success is the academic and social support components built into its model. Metropolitan College ensures that students receive guidance and

career building skills in addition to academic preparation.

The financial support for students is also a significant component of the Metropolitan College model. UPS provides part-time employment with full-time benefits; the learn-and-earn nature gives both a financial incentive to continue and the financial support that students need.

As Metropolitan College grows to include more employer partners like Humana and Community Alternatives Kentucky, the program becomes more than simply an add-on to the existing educational services provided at JCTC and University of Louisville. Metropolitan College may be part of a systemic change in the way Kentucky looks at allocating resources toward higher education.

### Northrop Grumman's Apprentice and Coop Programs

Northrop Grumman Corporation's Newport News (NGNN) facilities design, build, overhaul and repair cutting-edge naval ships, including Nuclear Aircraft Carriers and Submarines. This work requires a highly-skilled workforce with low turnover. NGNN has developed two innovative workplace based postsecondary education programs, in partnership with community colleges, apprenticeships and co-operative education or co-ops.

Though NGNN has been training workers in its Apprentice School of Shipbuilding since 1919, its partnerships with community colleges give NGNN the flexibility to provide promising apprentices with a path to an associate degree and career advancement. Community colleges like Thomas Nelson Community College and Tidewater Community College in the Hampton Roads area of Virginia benefit from NGNN's expertise in curriculum development and the job placement opportunities that NGNN provides.

The Apprentice School of Shipbuilding at NGNN is often praised for its approach to supporting apprentices with classroom learning, mentoring, and student services. Apprentices receive paid, on-the-job training in one of 19 registered apprenticeship programs with full benefits for four to five years. During this time, they also take a fundamental World Class Shipbuilder Curriculum and classes related to their trades. The Apprentice School maintains

articulation agreements with area 2- and 4-year colleges to ensure that credits earned in the apprentice programs are transferable.

Students who show particular aptitude and academic achievement during the first years of the apprenticeship program may be chosen to pursue further education at Thomas Nelson and Tidewater Community Colleges. These students may pursue an associate degree in business administration, engineering, marine engineering, or electrical engineering technology, paid for by NGNN.

In addition to partnering with NGNN to provide advanced training for apprentices, Tidewater and Thomas Nelson Community Colleges also partner with Northrop Grumman to provide co-op experiences for community college students interested in computer-assisted design. Qualified students at these community colleges receive full tuition for an associate degree in computer-aided drafting and design technology or mechanical engineering technology from NGNN and a paid co-op experience. After graduating, students are employed at NGNN with an average starting salary of \$31,200. NGNN also provides tuition reimbursement to those students who continue toward a bachelor's degree.

NGNN's education-conscious apprenticeships and partnerships with community colleges have been very successful. More than 2500 graduates of the Apprentice School still work at Northrop Grumman, and more than 32 percent of a recent graduating class of apprentices had earned an associate degree as part of their training. The program serves the colleges' and company's shared goals of filling a void in the workforce and ensuring that students have employment opportunities after graduation.

### *Why It Works?*

The Northrop Grumman partnerships work because they integrate the needs of students with the needs of the employer. Rather than simply training frontline employees and hiring mid-level workers who earned credentials elsewhere, NGNN makes investments in its apprentice and co-op students that go beyond what is necessary for an entry level position. These investments include mentoring, counseling, opportunities for further academic engagement, and career advancement pathways. The resources

necessary to achieve such a program are no small matter; NGNN estimates that it spends about \$100,000 per student in the Apprenticeship School. This kind of sustained support has paid off for the company in the long term.

Another possible reason for the success of the NGNN partnerships is that Northrop Grumman takes on the responsibility for providing the developmental and remedial education that many students need to be successful in educational programs. NGNN estimates that 40 percent of its new apprentices receive remedial training, ranging from a one week to an 11 week course. By providing these educational services in the apprentice program, it alleviates the burden on the community college system and sets its students up for success in pursuing further education.

#### Sector-Based Partnership: Columbia Gorge Community College

Many community college-industry partnerships begin with a workforce need expressed by an individual employer; this is certainly the case in the UPS and Northrop Grumman examples described above. Other partnerships begin with a community college that recognizes a regional economic sector challenge and calls upon businesses to help it meet the challenge. These sector initiatives can be hugely beneficial to both the college and the industry, but it takes initiative on the part of the community college to recognize a change in the workforce and act upon it.

In 2006, the chief academic officer at Columbia Gorge Community College (CGCC) in The Dalles, Oregon took such initiative, noting the emergence of a wind energy industry around the college. As windmills went up, turbine companies needed a local workforce to service them. CGCC saw an opportunity to fulfill a workforce need while also working with existing resources at the college to create a postsecondary credential in the wind energy field.

With help from workforce development representatives, CGCC identified a need for more than 300 wind turbine technicians in the area (the estimate increased to 700 by 2010). The community college partnered with industry and workforce development representatives, including Acciona Energy North America, Black and Veatch, Intel, and the Army Corps of Engineers, to develop a pilot

curriculum for a renewable energy technology program. These partnerships included both input from industry representatives as well as professional development opportunities. CGCC faculty spent time visiting wind turbine sites and learning firsthand the skills that they would need to impart in students.

Though CGCC relied upon donations from industry, it also drew upon the college's existing resources to shape its new Renewable Energy Technology Program (RET). Rather than starting anew, the college built on existing courses in hydropower and the expertise of its faculty. The college now offers one- and two-year programs that prepare students to work in wind-generation, hydro-generation, automated manufacturing, and engineering technician work. Employers in the area provide support for the programs, and the program has grown significantly since its inception in 2007.

Although it is still young, the RET program at CGCC has been a success. The program is filled to capacity, with approximately 106 students enrolled each year. It has produced 66 one-year certificates and 23 Associate of Applied Science degrees since 2007. The college reports that 80% of completers who want to work in a wind plant are hired.

#### *Why It Works?*

The CGCC has been successful in part because community college officials recognized the growth in the wind turbine sector earlier than other colleges; many other community colleges caught on to the trend much later. Also, the program benefited from significant investment on the part of industry and workforce development representatives. The wind turbine industry donated expertise in curriculum development, an opportunity for professors to observe the wind turbine industry firsthand, equipment, and \$4.9 million in cash grants. The Department of Labor also provides grant funding for the program that enabled its expansion. The cost per student for the RET program is not known, and unlike the UPS and Northrop Grumman examples, tuition costs are borne by individual students.

Another element to the program's success is the fact that it built upon existing resources. CGCC drew upon courses that prepare students for hydropower jobs as well as a defunct program aimed to train for the computer chip manufacturing field to create the

RET program. Perhaps because of this interdisciplinary beginning, RET prepares students for a number of energy generation fields, which makes its graduates more employable.

## V. PROGRAM OUTCOMES

The preceding case studies demonstrate that there is great deal of experimentation going on as community colleges and their industry partners grapple with the challenges of aligning learning, work and life responsibilities non-traditional students. One thing we notice is that many of these partnerships are still small, working with students in the hundreds or low thousands. The reality is that there is still much to learn about the prevalence, common structures and outcomes of these partnerships. There is still relatively little known about the effectiveness of most of these innovations and rigorous evaluation evidence remains scarce.<sup>xvii</sup> As a result it is difficult to create and exact typology of CCIPs.

So much so that in May 2009, the Bill and Melinda Gates Foundation, which has a keen interest alternative postsecondary education programs, announced a 3-year, \$5,000,000 multi-study research project to build a research to build a rigorous base of research knowledge on strategies for accelerating progression and increasing success among low-income young adults attending community colleges. The foundation funded this work because it found that such a research based was inadequate.

Accepting the scarcity of data, we can still look to related programs and initiatives that engage in some of the key activities of CCIPs to gain some sense of the impact. Evidence of success can be gleaned from the literature on Sector Initiatives that work closely with community colleges. An April 2007 report by the Aspen Institute, Workforce Strategies Initiative, conducted field research of sector initiatives around the country in which community colleges participated and found that these programs increased average monthly income of program completers by an estimated \$1,500.<sup>xviii</sup> Another Aspen Institute survey of graduates of six sector initiative programs found that working participants' earnings rose an average of \$8,580 before the program to \$14,040 the year following, and \$17,752 in the 2nd year after completion.<sup>xix</sup>

An MDRC Opening Doors demonstration project<sup>xx</sup> also shows some promising results of participating in CCIP key activities. The project, which works with community colleges in five states, emphasizes the importance of learning communities to promote student success. Results show modestly improved retention and credit completion for learning community students who receive academic/career supports<sup>xxi</sup>

Finally, with data gleaned from field research on CCIP, sector initiative and career pathway literature we can provide a broad range for the costs of such programs. Programs that incorporate many CCIP activities can cost between \$5,000 to \$100,000 per student.<sup>xxii</sup>

As noted above, these are inferential outcomes and data at best and much research and analysis needs to be done to really get at the effectiveness of CCIPs.

## VI. RECOMMENDATIONS

The purpose of this brief has been to provide an overview of community college and industry partnerships as institutional innovations for delivering postsecondary education to non-traditional students. It is clear from the case studies and lack of a strong outcomes data set for analysis that much work needs to be done by practitioners and policymakers to understand the how these partnerships actually help students and change community colleges at the institutional level.

Yet, the key success factors and activities do provide a foundation for both systematic innovation around "good practice" and continued research to identify "best practice". Business, institution and public policy leaders can use this foundation to bring more rigor to partnership development and analysis as well as an early warning system to identify potential challenges.

To promote systematic innovation, policymakers should review federal, state and local finance and regulation to ensure the "good practice" innovations are facilitated. Federal and state policy makers can:

- Ensure that formula funding streams and regulation do not stifle good practice when

partners are building an alternative education program.

- Use competitive grant funds to promote partnerships that emphasize sustainable, systemic change
- Continue to emphasize desired student outcomes to keep community colleges and partners focused on innovation.

To promote systematic research, policymakers should be look at what tools and information we lack to really measure the value of good practice and gather the data that makes it and evidence based best practice. Initial research questions should include:

- How can we develop a typology of CCIPs that fosters systematic research and innovation?
- Do community colleges have the requisite data systems to track CCIP participant outcomes?
- What are the demographics of students who participate in CCIPs?
- How can we calculate the return on investment to CCIPs?

## VII. CONCLUDING THOUGHTS

We close with an observation that for CCIPs to become an institution transforming catalyst in the community college system, they cannot be viewed primarily as an outgrowth of the vocational training function of the community college. This would plant these innovations firmly as a servant of one of the historical missions of the institution rather than a piece of a larger of the “New Vocationalism” puzzle to help transform higher education by integrating the three missions of academic transfer, occupational and developmental education.

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<sup>i</sup> U.S. Council of Competitiveness, “*Measuring Regional Innovation*”, (Council on Competitiveness, 2006)  
Soares, Louis & Chris Mazzeo, *College Ready Students, Student Ready Colleges: A Federal Agenda for Improving Degree Completion in Postsecondary Education*, Center for American Progress, 2008  
Osterman, Paul, *College For All?: The Labor Market for College Educated Workers*, Center for American Progress, 2008

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<sup>ii</sup> New Directions for Community Colleges, Special Issue: The New Vocationalism in Community College [Volume 2001, Issue 115, pages 73–80. Autumn \(Fall\) 2001.](#)

<sup>iii</sup> A traditional track being a student who attends college immediately following high school, attends full-time and is financially dependent on his/her parents.

<sup>iv</sup> MacAllum, K., & Yoder, K. (2004). *The 21st-century community college: A strategic guide to maximizing labor market responsiveness*. Washington, DC: U.S. Department of Education, Office of Vocational and Adult Education..

<sup>v</sup> Jenkins, D., & Spence, C. (2006). *The career pathways how-to guide*. New York, NY: Workforce Strategy Center.

Soares, Louis, Working Learners: Educating Our Entire Workforce for the 21<sup>st</sup> Century, Center For American Progress, 2009.; Harry Holzer and Demetra Nightingale, Strong Students, Strong Workers: Models for Student Success through Workforce Development and Community College Partnerships, Center for American Progress, December 2009.,

<sup>vi</sup> DeCastro, Belkis S. and Karp, Melinda M., A Typology of Community College Based Partnership Activities, Community College Research Center for Office of Vocational and Adult Education, January 2009.

<sup>vii</sup> 6.6 million in credit bearing courses and an estimated 6 million in non-credit bearing courses with a small percentage of students pursue recreations and personal enrichment courses.

<sup>viii</sup> NCES, Enrollment in Postsecondary Institutions, 2007: First Look NCES, 2009-155, table 5, p.11

<sup>ix</sup> U.S. Department of Education, NCES, 2003-04 Beginning Postsecondary Students Longitudinal Study, First follow-up.

<sup>x</sup> Soares, Louis, Working Learners: Educating Our Entire Workforce for the 21<sup>st</sup> Century, Center For American Progress, 2009

<sup>xi</sup> developmental or remedial education includes: adult basic education and English as a Second Language instruction.

<sup>xii</sup> Harris, Linda & Ganzglass, Evelyn, Creating Postsecondary Pathways to Good Jobs for Disconnected Youth, Center for American Progress, 2008.

<sup>xiii</sup> MacAllum, K., & Yoder, K. (2004). *The 21st-century community college: A strategic guide to maximizing labor market responsiveness*. Washington, DC: U.S. Department of Education, Office of Vocational and Adult Education.

<sup>xiv</sup> Jim Jacobs and others, “Career Pathways as A Systemic Framework: Rethinking Education for Student Success in College and Careers”, (Phoenix: League of Innovation in Community Colleges, 2007)

Career Pathways refers to a series of educational programs and services designed to prepare high school students and adults for employment and advancement in targeted jobs of importance in local communities

<sup>xv</sup> Carrie B. Kisker and Rozana Carducci, Community College Partnerships with the private sector – Organizational contexts and Models for Successful Collaboration, UCLA Community College review, Volume 31, #3, Winter 2003,

<sup>xvi</sup> Jim Jacobs and others, “Career Pathways as A Systemic Framework: Rethinking Education for Student Success in College and Careers”, (Phoenix: League of Innovation in Community Colleges, 2007)

<sup>xvii</sup> Harry Holzer and Demetra Nightingale, Strong Students, Strong Workers: Models for Student Success through Workforce

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Development and Community College Partnerships, December 2009.

<sup>xviii</sup> See Capital IDEA, Austin, Texas, in Sector Initiatives and Community Colleges: Working Together to Provide Education for Low-Wage Working Adults. Workforce Strategy Initiative, Aspen Institute, 2007.

<sup>xix</sup> Zandnipour, Lily and Conway, Maureen, “Closing the Gap: how sectoral workforce development programs benefit the working poor”, Aspen Institute 2001.

<sup>xx</sup> [http://www.mdrc.org/project\\_31\\_2.html](http://www.mdrc.org/project_31_2.html)

<sup>xxi</sup> Susan Scrivener and Michael J. Weiss, “More Guidance, Better Results? Three Year Effects of an Enhanced Student Services Program at Two Community Colleges,” (New York, MDRC, 2009).

<sup>xxii</sup> For example: Metropolitan College cost \$5,000 per student in program year 2007-08 and Project Quest a long-standing sector initiative in the Southwest United states costs \$10,000 per student and YearUp a highly intensive classroom and workplace based learning program costs \$24,000 per student.